Contribution ID: **11** Type: **not specified**

Pseudo-Nambu-Goldstone Boson Dark Matter Inspired by Grand Unification

Monday, 21 April 2025 14:30 (30 minutes)

A pseudo-Nambu-Goldstone boson (pNGB) is a compelling candidate for dark matter (DM), as it naturally evades the stringent constraints from current DM direct detection experiments. In this framework, the pNGB DM model can be embedded within an SO(10) grand unified theory, where SO(10) is first broken to the Pati-Salam gauge group at the unification scale and subsequently to the Standard Model gauge group at an intermediate scale. Constraints from DM lifetime and gamma-ray observations suggest that the pNGB DM mass must be below O(100) GeV. We find that the thermal relic abundance remains consistent with all constraints when the DM mass is close to half the mass of the CP-even Higgs boson.

Reference: arXiv:2104.13523

Primary author: Prof. TSUMURA, Koji (Kyushu University)

Presenter: Prof. TSUMURA, Koji (Kyushu University)

Session Classification: Plenary